



### **IB Group 4 Science**

Prior to the half term break, our Lower Sixth IB students have been working collaboratively to complete their Group 4 Science project. The Group 4 project is a requirement of the IB Diploma course Internal Assessment. It provides an opportunity for scientists to get together in interdisciplinary groups to analyse a common topic or problem. This year the research topic area targeted the National *recovery plan for a species in decline*.

On Friday 13<sup>th</sup> October, the students presented their findings to various staff and students in a lively market place, where they shared their findings and answered questions about their projects.

Representatives from the groups reflected on their fascinating projects:

#### **Deeksha Dinesh**

“Our team’s project was about saving the stout dart moth species (native to the UK, particularly Bedford) which were in decline. We researched reasons for its endangerment and how to increase the population numbers again, encompassing all four of the sciences into it- biology, chemistry, physics and computer science. Scarlett was creating the information presentation while Caitlin was formulating the foundation of an app about moth sightings and I was building a website regarding statistics and fun facts about the Stout Dart moth. For the imaginative element, we raised awareness in our local community by making weekly newsletters and Facebook pages. Throughout the one-week course of this project, we kept a video journal recording our progress which was displayed at the end of our

presentation as a memoir. For the final exhibition of our project, we collectively produced an SQL database, an app, a website, a presentation, a diagram of the life cycle of moths, a newsletter and a Facebook page.”

### **Evie Hayward**

The group that I was in decided to focus on Puffins after finding it surprising that puffins were in decline in the UK due to predation, lack of food sources and oil spills. The lack of food sources was an interesting factor as it meant that the broader food chain would be affected too. We initially linked our sciences to certain factors and then brainstormed to find solutions, some of which were setting physical boundaries in the sea or putting laws in place to prevent overfishing.”

### **Serena Jacob**

“Our collaborative project explored the reasons that coral reefs are endangered. We discovered that there are several key factors that can contribute to coral bleaching, which will leave the coral susceptible to disease and ultimately can lead to its death. We found out that 50% of the world's coral reefs have died in the last 30 years and it is even estimated that 90% of the world's corals will no longer be alive in the next century. This makes it vital to take action now, before the population of corals declines any further. We created a display board, which highlighted our findings. For the Computer Science component of the project, I created an interactive prototype for an app, which educates the user about how coral reefs can be affected by various factors. This project gave us the opportunity to study crucial global problems such as climate change and also helped us develop a plethora of skills; problem-solving, big picture thinking and effective collaboration, to name a few. We all really enjoyed the project experience and found it incredibly satisfying to impart our knowledge on corals to those who visited our display.

### **Olivia Davies**

“For our collaborative project, of course we decided to focus on the Nathusius Pipistrelle. It's one of three species from the genus *Pipistrellus*, a European migratory bat with reddish-brown fur and a body just slightly longer than that of an AirPods case. Despite centuries of evolution, our changing climate, increasing urbanisation and a large number of domestic cats are posing a large threat to the population numbers of this species. So, for the theoretical launch of The Bat-Man Plan, we came up with a range of easily implementable solutions, making sure they incorporated the four sciences. The Great Wind Turbine, usually seen as a saviour to our problems, is actually a bat-killing machine, blending thousands every year. However, through implementing ultrasonic acoustic technology upon the nacelle of the wind turbine, we've found a solution capable of reducing these casualties by half. Furthermore, bat zones should be applied to areas of high bat activity, meaning speed limit will be reduced in order to decrease risk of collision, and to tackle the cats, the ever-catchy 'keep your cat in at night' policy should be enforced. Visit The National Nathusius Pipistrelle Project [here](#), which is a volunteer-based conservation effort based here in the UK.